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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,757	02/19/2004	Atsushi Watanabe	392.1873	2075

21171 7590 10/04/2007  
STAAS & HALSEY LLP  
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1201 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER
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WEISKOPF, MARIE

ART UNIT	PAPER NUMBER
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3664

MAIL DATE	DELIVERY MODE
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10/04/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/780,757

Applicant(s)

WATANABE ET AL.

Examiner

Marie A. Weiskopf

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3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley et al. (4,402,053) in view of Piepmeier et al and further in view of Kanno (US 6,597,971 B2).

Kelley discloses a workpiece conveying apparatus comprising a robot (col. 1, line 34) having a hand to grip a workpiece (col. 1, lines 47-49) and conveying the workpiece (col. 1, lines 35-38), and a visual sensor (col. 1, lines 62-66). Kelley further discloses an image pick-up means for capturing an image of a characteristic portion of the workpiece that is being conveyed by said robot (col. 8, lines 35-36). Kelley further discloses a position detecting means for detecting, on the basis of an image of the characteristic portion obtained by said image pick-up means, the position of the characteristic portion of the workpiece observed when the image is captured (col. 8, lines 36-38). Kelley further discloses a visual sensor that recognizes the gripped state of said workpiece while the workpiece is being conveyed by the robot, on the basis of the positions of the robot and the characteristic portion of the workpiece observed when the image is captured (col. 8, lines 38-39). Kelley discloses a means for storing in advance a

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predetermined gripped state established by the hand of said robot (col. 10, lines 46-52). Kelley further discloses a means for comparing the predetermined gripped state with the gripped state recognized by said visual sensor (col. 8, lines 36-39) to determine an error inherently by determining the hand-workpiece relationship (col. 13, lines 31-32). Kelley inherently discloses the error since an error is needed to make a correction.

Kelley fails to disclose the image pick-up means for capturing an image of a characteristic portion of the workpiece while the workpiece is being moved by the robot to a release position. Kelley discloses stopping the workpiece and taking the image and not taking the image while the workpiece is being moved, however, it is well known in the art to be able to do this. Piepmeier et al, although doesn't teach taking an image of a workpiece while being moved by the robot, is capable of taking an image while a workpiece is being moved and from that determine what corrections are needed to be made. (Column 5, line 50 – Column 6, line 10; Column 6, lines 54-67; abstract) It would have been obvious to one having ordinary skill in the art at the time of the invention to be able to take images of a workpiece as it is moving since it is well known in the art already that this can be done. (Column 2, lines 38-53)

Kelley also fails to disclose a means for stopping the robot when the error exceeds a predetermined tolerance limit or means for issuing a signal indicative of a fault. Kanno in the same field of invention discloses a means for stopping the robot when the error exceeds a predetermined tolerance limit or means for issuing a signal indicative of a fault (col. 6, lines 52-57). From this teaching of Kanno, it would have been obvious to one having ordinary skill in the art at the time the invention was made

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to modify the robot of Kelley to include discloses a means for stopping the robot when the error exceeds a predetermined tolerance limit or means for issuing a signal indicative of a fault of Kanno, in order to avoid the robot damaging the workpiece thereby reducing cost.

As per claim 4, Kelley discloses a gripped state is provided by a relative position and posture between an arm tip or said hand of said robot and said workpiece (col. 12, lines 44-53).

As per claim 5, Kelley discloses a means for detecting the positions of the robot observed when the image is captured (col. 10, lines 55-57), and the robot controller comprises means for synchronizing an image pick-up instruction given to said image pick-up means with the detection of the position of the robot, observed when the image is captured, by means of said detecting means (col. 1, lines 67-68 and col. 2, lines 1-5).

As per claim 6, Kelley discloses the imaging instruction synchronized with the detection of the position of the robot observed when the image is captured is repeatedly executed a number of times (col. 14, lines 25-40).

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley et al. (4,402,053) in view of Piepmeier et al.

As per claim 3, Kelley discloses a workpiece conveying apparatus comprising a robot (col. 1, line 34) having a hand to grip a workpiece (col. 1, lines 47-49) and conveying the workpiece (col. 1, lines 35-38), and a visual sensor (col. 1, lines 62-66). Kelley further discloses an image pick-up means for capturing an image of a characteristic portion of the workpiece that is being conveyed by said robot (col. 8, lines

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35-36). Kelley further discloses a position detecting means for detecting, on the basis of an image of the characteristic portion obtained by said image pick-up means, the position of the characteristic portion of the workpiece observed when the image is captured (col. 8, lines 36-38). Kelley further discloses a visual sensor that recognizes the gripped state of said workpiece while the workpiece is being conveyed by the robot, on the basis of the positions of the robot and the characteristic portion of the workpiece observed when the image is captured (col. 8, lines 38-39). Kelley discloses a means for storing in advance a predetermined gripped state established by the hand of said robot (col. 10, lines 46-52). Kelley further discloses a means for comparing the predetermined gripped state with the gripped state recognized by said visual sensor (col. 8, lines 36-39) to determine an error inherently by determining the hand-workpiece relationship (col. 13, lines 31-32). Kelley inherently discloses the error since an error is needed to make a correction. Kelley further discloses a means for correcting a position to which said robot conveys the workpiece, on the basis of the error (col. 13, lines 33-34).

Kelley fails to disclose the image pick-up means for capturing an image of a characteristic portion of the workpiece while the workpiece is being moved by the robot to a release position. Kelley discloses stopping the workpiece and taking the image and not taking the image while the workpiece is being moved, however, it is well known in the art to be able to do this. Piepmeier et al, although doesn't teach taking an image of a workpiece while being moved by the robot, is capable of taking an image while a workpiece is being moved and from that determine what corrections are needed to be

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made. (Column 5, line 50 – Column 6, line 10; Column 6, lines 54-67; abstract) It would have been obvious to one having ordinary skill in the art at the time of the invention to be able to take images of a workpiece as it is moving since it is well known in the art already that this can be done. (Column 2, lines 38-53)

***Response to Arguments***

4. Applicant's arguments with respect to claims 1 and 3 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

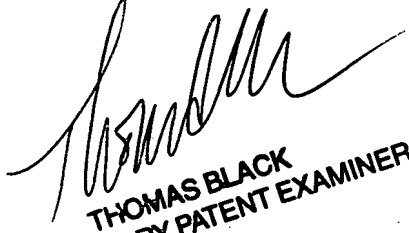
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marie A. Weiskopf whose telephone number is (571) 272-6288. The examiner can normally be reached on Monday-Thursday between 7:00 AM and 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MW

  
THOMAS BLACK  
SUPERVISORY PATENT EXAMINER